Claims

1. A modified asialo-interferon, comprising an asialo-interferon that is conjugated to a water-soluble polymer having an average molecular weight of approximately 1,000 to 60,000 daltons.

2. The modified asialo-interferon of claim 1, wherein said water-soluble polymer has an average molecular weight of approximately 10,000 to 20,000 daltons.

3. The modified asialo-interferon of claim 1, wherein said modified asialo-interferon is a pegylated asialo-interferon

4. The modified asialo-interferon of claim 3, wherein said pegylated asialo-interferon is pegylated at a cysteine, lysine, serine, threonine, tyrosine, aspartic acid, or glutamic acid residue; at a C-terminal carboxyl; or at an N-terminal amine.

5. The modified asialo-interferon of claim 4, wherein said pegylated asialo-interferon is pegylated at a cysteine residue.

6. The modified asialo-interferon of claim 4, wherein said pegylated asialo-interferon is pegylated at a lysine residue.

7. The modified asialo-interferon of claim 1, wherein said modified asialo-interferon is a pvpylated asialo-interferon.

8. The modified asialo-interferon of claim 7, wherein said pvpylated asialo-interferon is pvpylated at a cysteine, lysine, serine, threonine, tyrosine, aspartic acid, or glutamic acid residue; at a C-terminal carboxyl; or at an N-terminal amine.

9. The modified asialo-interferon of claim 8, wherein said pvpylated asialo-interferon is pvpylated at a cysteine residue.

10. The modified asialo-interferon of claim 8, wherein said pvpylated asialo-interferon is pvpylated at a lysine residue.

11. The modified asialo-interferon of claim 1, wherein said modified asialo-interferon comprises an asialo-interferon-α, an asialo-interferon-β, or an asialo-interferon-γ.

12. The modified asialo-interferon of claim 11, wherein said asialo-interferon is a human asialo-interferon.

13. The modified asialo-interferon of claim 1, wherein the polypeptide sequence of said asialo-interferon comprises an additional cysteine residue compared to the sequence of mature interferon polypeptide.

14. The modified asialo-interferon of claim 13, wherein said cysteine replaces a threonine or serine residue of said mature interferon polypeptide.

15. A pharmaceutical composition comprising a modified asialo-interferon of claim 1, and a pharmaceutically acceptable excipient.

16. The pharmaceutical composition of claim 15, wherein said water-soluble polymer having an average molecular weight of approximately 1,000 to 60,000 daltons.

17. The pharmaceutical composition of claim 15, wherein said water-soluble polymer having an average molecular weight of approximately 10,000 to 20,000 daltons.

18. The pharmaceutical composition of claim 15, wherein said modified asialo-interferon is a pegylated asialo-interferon.

19. The pharmaceutical composition of claim 15, wherein said modified asialo-interferon is a pvpylated asialo-interferon.

20. The pharmaceutical composition of claim 15, wherein said modified asialo-interferon comprises an asialo-interferon-α, an asialo-interferon-β, or an asialo-interferon-γ.

21. The pharmaceutical composition of claim 15, wherein said modified asialo-interferon is a modified human asialo-interferon.

22. A method of treating a patient with a hepatic disorder comprising administering to said patient a therapeutically effective amount of a pharmaceutical composition comprising a mammalian asialo-interferon conjugated to a water-soluble polymer having an average molecular weight of approximately 1,000 to 60,000 daltons.

23. The method of claim 22, wherein said modified asialo-interferon is a pegylated asialo-interferon.

24. The method of claim 22, wherein said modified asialo-interferon is a pvpylated asialo-interferon.

25. The method of claim 22, wherein said hepatic disorder is viral hepatitis, hepatic cancer, or fibrosis of the liver.

26. The method of claim 22, wherein said patient is infected with a hepatitis B virus or a hepatitis C virus.

27. The method of claim 22, wherein said hepatic disorder is diffuse-type hepatocellular carcinoma, febrile-type hepatocellular carcinoma, and cholestatic hepatocellular carcinoma, hepatoblastoma, hepatoid adenocarcinoma, and focal nodular hyperplasia.

28. The method of claim 22, wherein said modified asialo-interferon comprises an asialo-interferon-α, an asialo-interferon-β, or an asialo-interferon-γ.

29. The method of claim 28, wherein said asialo-interferon is a human asialo-interferon.